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Schistocerca americana Drury.

Wilmington, Southport, Southern Pines. Many seen at all three localities.

Schistocerca damnifica Sauss.

Wilmington, April 5, 7, 11, 7 males; Southport, April 10, 2 males; Southern Pines, April 13, 8 males, 3 females.

Leptysma marginicollis Serv.

Wilmington, April 7, 2 males, 2 females.

Stenacris vitreipennis Marsch.

Wilmington, April 7, 1 male, beaten from a bush into an umbrella by Mr. Barber. This appears to be an addition to the list of the Orthoptera of the State.

Diapheromera carolina Scudder.

This species was described from North Carolina, and a specimen collected by Mrs. Annie Trumbull Slosson at Lake Toxaway, N. C., was recorded in this Journal, Vol. XXI, p. 81, March, 1913.

Preliminary Studies of North Carolina Orthoptera, by James A. G. Rehn and Morgan Hebard, Proc. Acad. Nat. Sci. Phil., Nov. 1910, gives a considerable list of the Orthoptera of the State together with references to the literature. The Orthoptera of North Carolina, by F. Sherman, Jr., and C. S. Brimley, Entomological News, Vol. XXII, pp. 387-392, Nov., 1911, records one hundred and fifty-seven species from the State.

WM. T. DAVIS.

PROCEEDINGS OF THE NEW YORK ENTOMOLOGICAL SOCIETY.

MEETING OF MAY 5, 1914.

A regular meeting of the New York Entomological Society was held May 5, 1914, at 8.15 P. M., in the American Museum of Natural History, President Dr. Raymond C. Osburn in the chair and seventeen members and four visitors, including Dr. N. L. Britton, present.

The curator reported recent work on the local collection, including the arrangement of Bombylidæ and Tabanidæ.

Mr. Davis announced the death of John A. Grossbeck, in Barbados, on April 8, and read part of a letter from William J. Gerhard, in which the attainments of Mr. Grossbeck as an entomologist and the high esteem in which he was personally held were expressed. Letters from Dr. Henry Skinner, Dr. E. P. Felt, Mr. Nathan Banks and others were also at hand.

Mr. Davis moved that in place of formal resolutions the secretary be instructed to send a letter to Mrs. Grossbeck expressing the sorrow of all the members of the Society and the affectionate remembrance in which our librarian and friend would always be held.

Letters from Dr. W. E. Britton, offering to donate copies of Bulletin 181, dealing with Connecticut Lady Beetles, and from the President of the Agassiz Association, inviting the members to visit Arcadia, were read.

A catalogue of Linnean specimens by the general secretary of the Linnean Society of London was exhibited by Dr. Lutz.

Mr. Davis, under the title "Notes on Spring Collecting in North Carolina," described the journey he made April 5 to Wilmington, Southport, Southern Pines and Raleigh, N. C., in part with Mr. Barber, showing many of the insects he caught and photographs of the regions he visited. A few of the plants, including yellow jessamine, live oak, and American beech, were shown, and judging by the latter especially, Mr. Davis thought the season at Wilmington about five weeks ahead of New York. Dr. Britton later said that this coincided with the usual estimate of spring advance on the Atlantic coast at the rate of thirteen miles per day, since the distance between Wilmington and New York, 450 miles, was almost exactly 35×13 .

Mr. Davis spoke of collecting on the beach and the circumscribed area in which the wash-up was found productive, similar to, but even more pronounced than the same condition observed on Long Island. He described the low, flat lands about Wilmington, often overflowed or swampy, the extensive abandoned rice fields, sometimes overgrown with golden club in April, the splendid forests, in which three species of pine and enormous beeches were seen and the more sandy areas in which *Cicindela scutellaris carolina* and other species were caught.

His pictures of Southport showed the cedars, the large live oaks growing in the streets and especially in one fine picture, thick about the school house, with the children romping beneath them. Mr. Davis spoke enthusiastically of this town, but according to Mr. Barber's remarks later in the evening, even his enthusiasm failed to do full justice to its many attractive features.

At Southern Pines, Mr. Davis visited Mr. and Mrs. A. H. Manee, and photographs of them and their home were included in his exhibit. The rattling noise made by *Brachys ovata* within the oak leaves it mines, previously noticed in Florida, was here described to Mr. Davis by Mr. Manee, who said his attention had first been drawn to it by an old darky.

At Raleigh, Professor Metcalf, Franklin Sherman, C. S. Brimley and other friends were seen and some desirable grasshoppers were obtained. Several large boxes of the insects captured on the trip were shown, including *Bu-prestis decora*, *Thecla damon*, many other species of Lepidoptera, eight species of dragon flies, Syrphids for Dr. Osburn, thirteen species of grasshoppers, of which two proved new to the N. C. State List, and many insects of other orders. The grasshoppers will later form the subject of a special article by Mr. Davis.

Dr. Lutz exhibited a large number of photographs obtained during his recent visit to Porto Rico and many colored slides loaned by Professor Cramp-

ton. Mona Island, with its level top elevated about 150 feet above the sea, formed of limestone, full of caves, densely clothed with vegetation; Desecco, rising in a series of peaks, with its stratified rocks, as well as Porto Rico itself, formed the subject of his remarks. The beauty of the scenery in the last named mountainous island, which, Dr. Lutz said, was about half the size of New Jersey, but twice as high, was shown by many pictures, while others exhibited special features like the tree ferns, the isolated limestone hills near the coast, the Indian carvings, the curious spider webs near cave entrances, the cocoanut palms, bananas and other tropical plants, including one locally called "Woman's Tongue," from the continual rattling of the dried pods of beans. On account of the specimens being still unlabeled, the many insects obtained were not exhibited, but Dr. Lutz remarked on the unexpected absence of Cicindelidæ on the sea beaches.

Dr. Britton, on request, spoke of West Indian distribution, as shown in plants, saying that it was not necessary to assume land connection to explain existing plant population, the forces of wind and water being sufficient. The hurricane winds are known to transport light material for enormous distances; and while this view may not be wholly defensible, the forces mentioned are very potent. The flora is more or less alike on all the volcanic ash islands, as it is also on the larger islands, which may therefore have been once connected; but such a connection as to Porto Rico is very doubtful. Mona Island, lying between Porto Rico and Hispaniola, contains in its twenty square miles no botanical element that could not apparently have been transported by wind or sea. In the Bahamas the plant population, apart from endemic species, is closely related to that of the mainland. To deny absolutely the possibility of land connections would be fatuous; but to claim that the great bulk of the species have reached their present situation by forces of nature subsequent to the formation of the islands seems reasonable. On the other hand, the effectiveness of the Mona Passage, eighty miles wide, between Porto Rico and Hispaniola as a barrier is shown by its having stopped many species.

Continuing, Dr. Britton said the isolation of Jamaica, as a floral province, had been pointed out sixty years ago; Cuba, southern Florida, and the Bahamas appeared to constitute a second; the volcanic islands, from St. Kitt's southward, formed what might be called the fourth; the constitution of the third remains doubtful, awaiting zoological evidence to aid the botanical as well as more details of the latter. Hispaniola remains the least known and may ultimately be grouped with Cuba or with Porto Rico. No one can say which at present, although the greater alliance seems to be with Cuba according to recent authorities. Dr. Britton added that since the islands are all comparatively recent, geologically speaking, the Jurassic formation having only recently been detected in Cuba, correcting the previous impression that the Cretaceous was the oldest, the greatest difficulty in ascribing the distribution to wind and water lies in the question as to whether there has been sufficient time for these forces to effect it.

In answer to Dr. Lutz, Dr. Britton said he thought the flora of Porto Rico would eventually prove to be most closely related to that of St. Thomas, but sufficient data were not yet at hand for a definite statement.

Mr. Leng, on request, repeated his views that the occurrence in Cuba of many boreal genera of Carabidæ, beetles which from their habit of hiding under stones and logs are little liable to transportation by winds, and from their inland environment are even less liable to transportation by drift, made the acceptance of the theory difficult for a coleopterist. The specific identity of certain cosmopolitan species is admitted and the methods by which they have been transported by commerce are evident; the specific identity of a few seashore, salt marsh, and certain strong flying species is equally admitted and the operation of the forces of wind and water in carrying them may be accepted as plausible and as probable as the similar distribution of the seeds of plants by the same forces; but the number of such cases of specific identity is small and the difficulty is to account for the large number of cases of generic identity between the Carabid fauna of Cuba and that of the United States, amounting almost to absolute identity when comparison is made with a southern state, like Florida. Furthermore, the elevation of the sea bottom, supporting the coral reefs of the Cuban shore, of Florida and the Bahamas, the very places indicated by Dr. Britton as constituting a flora province, cannot fail to suggest a former land connection, which for the distribution of insects need not have been of great elevation, nor even more than temporary in character. If such an elevation is reasonably assumable, and it has already been advanced to account for the Carolinian character of part of the plants of Newfoundland, it would explain in a satisfactory manner the observed relationship. Mr. Leng added that the data for most of the islands were scanty, and beyond the Cuban relation, nothing definite could be stated.

Dr. Britton cited Bermuda as a certain example of an island, perched on the peak of a submerged volcanic mountain, the population of which, in plants and insects, much have reached it by wind, water or human agency, the flora of which, comprising about three hundred species, is all southeastern. He said that there were possibilities each way, but Bermuda furnishes an excellent example of what can be accomplished without land connection; and in view of the very long time during which the forces urged have been in operation, the known transportation of the eggs of Mollusca (presumably analogous to those of insects) by birds, in addition to the agencies previously mentioned, he leaned away from the theoretical land connection, though willing to consider it further if evidence were forthcoming.

Mr. Barber read a paper on "Hemiptera from Wilmington and Southport, North Carolina," illustrated by many specimens caught while there with Mr. Davis on his spring vacation. Fifty-four species of Hemiptera were taken, mainly Heteroptera; the best returns came from beating cedars and pines, though the beach wash-up yielded as many as twenty-five species, tempted abroad by the warmth of the preceding days. The absence of stones or other suitable shelter made the usual spring methods less productive than usual; and familiar forms predominated, though there were some conspicuous exceptions, like *Macrocephalus prehensilis*, *Banasa packardii*, *Zelus cervicalis*, *Z. bilobus*, *Panonius longulus*, species not found by Mr. Barber even in his two summers' work in Virginia.